

What is claimed is:

1. An ultraviolet ray lamp comprising:
a discharge vessel made of quartz glass having a filling gas therein;
a pair of electrodes constructed and arranged to generate a discharge in the discharge vessel; and
an optical filter including a metal oxide, which is formed on part of the outer surface of the discharge vessel, transmitting ultraviolet rays of long wavelength and blocking ultraviolet rays of short wavelength.
2. An ultraviolet ray lamp according to claim 1, wherein the quartz glass does not contain substantial amounts of titanium oxide (TiO_2), and cerium oxide (CeO_2).
3. An ultraviolet ray lamp according to claim 1, wherein the optical filter has an energy band gap of 4.5 to 6.7eV.
4. An ultraviolet ray lamp according to claim 1, wherein the optical filter comprises zirconium oxide (ZrO_2).
5. A device for generating ultraviolet rays comprising:
an ultraviolet ray lamp constructed and arranged to generate ultraviolet rays including short and long wavelength, the lamp having a discharge vessel made of quartz glass;
an enclosure accommodating the discharge vessel, transmitting at least ultraviolet rays of short wavelength; and
an optical filter comprising a metal oxide, which is formed on at least part of one side surface of the enclosure, transmitting ultraviolet rays of long wavelength and blocking ultraviolet rays of short wavelength.
6. A device according to claim 5, wherein the optical filter has an energy band gap of 4.5 to 6.7eV.

7. A device according to claim 5, wherein the optical filter comprises zirconium oxide (ZrO_2).

8. A sterilizer comprising:
a device constructed and arranged to generate ultraviolet rays comprising:

an ultraviolet ray lamp constructed and arranged to generate ultraviolet rays including short and long wavelength, and having a discharge vessel made of quartz glass;

an enclosure accommodating the discharge vessel, the enclosure transmitting at least ultraviolet rays of short wavelength; and

an optical filter comprising a metal oxide, which is formed on at least part of one side of a surface of the enclosure, transmitting ultraviolet rays of long wavelength and blocking ultraviolet rays of short wavelength;

a holder supporting the ultraviolet ray lamp; and

a body fixing the holder, and accommodating the ultraviolet ray lamp.

9. A sterilizer comprising:

an ultraviolet ray lamp;

a holder supporting the ultraviolet ray lamp, the ultraviolet ray lamp comprising:

a discharge vessel made of quartz glass and having a filling gas therein;
a pair of electrodes constructed and arranged to generate a discharge in the discharge vessel; and

an optical filter comprising a metal oxide, which is formed on at least a part of the outer surface of the discharge vessel, transmitting ultraviolet rays of long wavelength and blocking ultraviolet rays of short wavelength; and

a body fixing the holder, and accommodating the ultraviolet ray lamp.

10. A sterilizer according to claim 8 or 9, further comprising a photocatalytic member arranged so as to be able to receive ultraviolet rays.

11. An apparatus for treating water comprising:
a device constructed and arranged to generate ultraviolet rays
comprising:

an ultraviolet ray lamp generating ultraviolet rays including short and long wavelength, having a discharge vessel made of quartz glass;
an enclosure accommodating the discharge vessel, transmitting at least ultraviolet rays of short wavelength; and
an optical filter comprising a metal oxide, which is formed on at least part of one side of the surface of the enclosure, transmitting ultraviolet rays of long wavelength and blocking ultraviolet rays of short wavelength;
a holder supporting the ultraviolet ray lamp;
a water tank fixing the holder, and accommodating the ultraviolet ray lamp; and
a blower supplying air to the tank.

12. An apparatus according to claim 11, further comprising a photocatalytic member arranged so as to be able to receive ultraviolet rays.

13. An air cleaner comprising:

a case having an intake and an exhaust;
a blower for causing air to flow through the case; and
an ultraviolet ray lamp, arranged in the airflow, the lamp comprising:
a discharge vessel made of quartz glass and having a filling gas therein;
a pair of electrodes constructed and arranged to generate a discharge in the discharge vessel; and
an optical filter comprising a metal oxide, which is formed on at least part of the outer surface of the discharge vessel, transmitting ultraviolet rays of long wavelength and blocking ultraviolet rays of short wavelength.

14. An air cleaner according to claim 13, further comprising a photocatalytic member.